# TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE · · · FOREST SERVICE
UNIVERSITY FARM ST. PAUL 1, MINNESOTA
No. 407


## Comparison of Man Hours Required for Thinning and Clear Cutting Pole-Size Aspen

spen has been found to respond readily to thinning; however, the least expensive gging method is to clear cut. Therefore, the advantages of thinning are not re- ized until the residual stand is finally harvested. At that time logging costs ill be reduced because of the existing road and skid-trail system and because the ees will be of larger average diameter and volume. In addition, it is probable at the total yield per acre from thinned stands will be greater because of the ortality that is salvaged.

o test the practicability of commercial thinnings in pole-size aspen in northern )wer Michigan, a cutting study was recently initiated by the American Boxboard ompany, the U. S. Forest Service, and the University of Michigan. A 50-acre block 35-year-old bigtooth aspen averaging 22 cords per acre was divided into four ots of about 12 acres each and commercially logged during the winter and spring 1953. The treatments were: (1) low thinning, in which trees mostly under 7 ches in diameter were cut, as is logical for veneer bolt or sawlog management; ) crown thinning, removing trees mostly over 7 inches in diameter, as might be asible solely for pulpwood production; and (3) clear cutting, as is commonly acticed locally in stands of similar character. A fourth plot was left uncut a check since growth and mortality are to be followed in the thinned plots.

aily reports were submitted by each woods worker listing the time spent on the rious logging tasks. Local practice of combining felling with bucking, and idding with loading, made separation of these items impractical. Time records d volumes of pulpwood harvested were kept separately for each plot as shown in e following table:

| Cutting method | Volume harvested: Per acre | Volume harvested: Total | Logging time per cord: Felling-bucking | Skidding-loading | Road-building | Delays | Total |
|---|---|---|---|---|---|---|---|
| | Cords | Cords | Man hours | Man hours | Man hours | Man hours | Man hours |
| lot 1 - Low thinning | 13 | 155 | 2.3 | 1.1 | .57 | .03 | 4.0 |
| lot 2 - Crown thinning | 12 | 145 | 1.9 | 1.5 | .12 | .06 | 3.6 |
| lot 3 - Clear cutting | 22 | 247 | 1.8 | 1.1 | .03 | .02 | 3.0 |

he plots were logged by part-time farmer timber cutters using a 1-man chain saw, light wheel tractor with a hydraulic fork-lift, and a dray with runners in winter d rubber-tired wheels in spring. More time was spent cutting roads and less time idding in Plot 1 than in Plot 2, but the total time for both jobs was about the same egardless of the thinning treatment.


OWLAND W. BLAIR, Chief Forester
merican Boxboard Company

ROBERT A. RALSTON, Research Forester
Lake States Forest Experiment Station



ctober 1953
MAINTAINED IN COOPERATION WITH THE UNIVERSITY OF MINNESOTA